

## New Hampshire Energy Facts: Definitions and Technical Notes

- **Gross energy use** represents energy at its point of first use. It is all the energy that was put into all activities and processes in the state, including generating electricity for export. Examples: #2 oil burned to heat a house; natural gas burned to generate electricity. The technical term for energy used in these ways is “primary energy”. This term is used by the US Department of Energy’s (DOE) Energy Information Administration (EIA). We use “gross energy use” in New Hampshire Energy Facts for convenience. Gross energy use has more economic and environmental implications than *net* energy use (see below).
  - **LFG** is landfill gas, produced by decomposing biomass in the buried rubbish. It has approximately 50% as much energy as natural gas.
  - **“Losses”** refers to the energy unavoidably “lost” in generating electricity, and the energy “lost” in transmitting electricity from generator to its point of end use. US DOE estimates that this “lost” energy averages 69% of the energy that was put into generation and transmission. Thus, electricity at end use point represents, on average, about 31% of the primary energy that was put into the generation process. The energy “lost” while transmitting electricity over power lines escapes as heat and other forms of radiant energy, and can be heard as “static” on AM radio near high-voltage electricity transmission lines.
  - **MSW** is municipal solid waste. The US Department of Energy (DOE) has determined that the portion of MSW derived from plant and animal remains (“biogenic”), is renewable. DOE’s estimate of renewable energy in MSW for 2005 is 56%. Thus, Table 1 divides the 2.7 TBtu of MSW consumed in 2005 into 1.5 TBtu renewable (56% of 2.7 TBtu) and 1.2 TBtu non-renewable (44% of 2.7 TBtu).
  - **Net energy use** is important to consider because it are equal to the amount of energy at end use *in New Hampshire*. Net energy use is less than gross energy use because New Hampshire exports some energy as electricity. Net energy use represents the energy necessary to conduct all activities *within the state*, and this amount is the value used by EIA in all its states’ energy analyses. This is the amount of energy that would have to be provided if we were interested in meeting only in-state energy demands. It is also the amount of energy that the New Hampshire 25 x ’25 Initiative is using to calculate the amount of renewable energy needed to meet the 25% of the state’s energy demand 2025; see <http://www.nh.gov/governor/news/2006/082906energy.htm> .
  - **TBtu** (Trillion British thermal units) are units of energy. Gallons, tons, cords and cubic feet are units of volume and weight. Because the amounts of energy released from a gallon of gasoline, a gallon of heating oil, a ton of coal, a gallon of propane, a cord of wood or a therm of natural gas are not comparable, it is difficult to analyze how much energy is provided to the state from what sources. Converting all the fuel volumes and weights to a common energy unit, TBtu, simplifies analysis and facilitates energy planning.
    - To provide a sense of scale: There are approximately
    - 138,690 Btus per gallon of #2 fuel oil
    - 122,600 Btus per gallon of conventional, regular grade gasoline
    - 3,412 Btus per kilowatt hour (kWh) of electricity.
- So, one TBtu is the amount of energy in
- 7,210,325 gallons of #2 fuel oil
  - 8,156,600 gallons of conventional, regular grade gasoline
  - 293,080 MWh of Electricity (at end use).
- One British thermal Unit (**Btu**) is approximately the amount of heat released by burning one kitchen match.